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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/118,010	07/17/1998	SHUNPEI YAMAZAKI	0756-1838	8550

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EXAMINER	
GUERRERO, MARIA F	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/118,010	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Maria Guerrero	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 11-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed August 19, 2004.

Status of Claims

2. Claims 9-10 are canceled. Claims 1-8 and 11-73 are pending.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on October 14, 2004 has been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 11, 13, 15, 18-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamahiko Nishiki et al. (JP 63-279228) (cited by Applicant) in view of Takenouchi et al. (U.S. 5,427,961).

5. Tamahiko Nishiki et al. discloses a semiconductor device comprising a first substrate, a TFT having pixel electrodes with source and drain regions, a second substrate, a gate insulating film, and a semiconductor film (amorphous silicon (including microcrystalline silicon)) (Fig. 1(A)-6). Tamahiko Nishiki et al. teaches an insulating film

(polyimide) having a flat surface provided on the first substrate to planarize the surface (Fig. 1(A)-6, pages 8-15).

Tamahiko Nishiki et al. fails to disclose the substrate being a resinous substrate such as polyethylene terephlate, polyethylene napthtalate, polyethylene sulfite and polyimide as claimed. Tamahiko Nishiki et al. fails to show the resinous material consisting of: methyl ester of acrylic acid, ethyl ester of acrylic acid, butyl ester of acrylic acid and 2-ethyhexyl ester of acrylic acid as claimed. However, this is known in the art as evidenced Takenouchi et al.

Takenouchi et al. discloses a semiconductor device having a resinous substrate, the resinous substrate made of polyester (e.g., PET (polyethylene terephlate)), polyimide, fluoroplastic, PES (polyethylene sulfane) (col. 3, lines 49-55). Takenouchi et al. also teaches a resinous layer provided on the resinous substrate including an acrylic resin (e.g. methyl acrylate ester, ethyl acryalate ester, butyl acrylate ester, and 2-ethyhexyl acrylate ester (col. 3, lines 55-60). In addition, Takenouchi et al. discloses providing the film on the substrate with the purpose of leveling the initial surface irregularities (col. 4, lines 10-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Tamahiko Nishiki et al. reference by including the resinous substrate taught by Takenouchi et al. in order to reduce cost and to obtain a device easily handled having a larger field of application and free from oligomeros (Takenouchi et al., col. 1, lines 15-25, col. 3, lines 20-25).

6. Claims 5-8, 12, 14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamahiko Nishiki et al. (JP 63-279228) (cited by Applicant) in view of Takenouchi et al. (U.S. 5,427,961) and Noguchi et al. (U.S. 5,529,951) (of record).

7. Tamahiko Nishiki et al. discloses a semiconductor device comprising a first substrate, a TFT having pixel electrodes with source and drain regions, a second substrate, a gate insulating film, and a semiconductor film (amorphous silicon (including microcrystalline silicon)) (Fig. 1(A)-6). Tamahiko Nishiki et al. teaches an insulating film (polyimide) having a flat surface provided on the first substrate to planarize the surface (Fig. 1(A)-6, pages 8-15).

Tamahiko Nishiki et al. fails to disclose the substrate being a resinous substrate such as polyethylene terephlate, polyethylene napthtalate, polyethylene sulfite and polyimide as claimed. Tamahiko Nishiki et al. fails to show the resinous material consisting of: methyl ester of acrylic acid, ethyl ester of acrylic acid, butyl ester of acrylic acid and 2-ethyhexyl ester of acrylic acid as claimed. However, this is known in the art as evidenced Takenouchi et al.

Takenouchi et al. discloses a semiconductor device having a resinous substrate, the resinous substrate made of polyester (e.g., PET (polyethylene terephlate)), polyimide, fluoroplastic, PES (polyethylene sulfane) (col. 3, lines 49-55). Takenouchi et al. also teaches a resinous layer provided on the resinous substrate including an acrylic resin (e.g. methyl acrylate ester, ethyl acryalate ester, butyl acrylate ester, and 2-ethyhexyl acrylate ester (col. 3, lines 55-60). In addition, Takenouchi et al. discloses

providing the film on the substrate with the purpose of leveling the initial surface irregularities (col. 4, lines 10-15).

Tamahiko Nishiki et al. does not specifically show the semiconductor layer comprising crystalline silicon as claimed. However, Noguchi et al. describes employing crystalline silicon as the semiconductor layer in order to obtain superior electrical characteristics (Abstract).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Tamahiko Nishiki et al. reference by including the resinous substrate taught by Takenouchi et al. and the crystalline silicon suggested by Noguchi et al. in order to obtain a device easily handled having a larger field of application and superior electrical characteristics (Takenouchi et al., col. 1, lines 15-30; Takenouchi et al., Abstract).

Response to Arguments

8. Applicant's arguments filed August 19, 2004 have been fully considered but they are not persuasive. Claims 1-4, 11, 13, 15, 18-73 stand rejected.

In response to applicant's argument that how the glass substrate of Nishiki would be change to the PET substrate of Takenuchi, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of

the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Takenouchi et al. suggested that PET substrates should be used instead of glass substrates to obtain a device easily handled having a larger field of application (Takenouchi et al., col.1, lines15-30).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Furthermore, the strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. In re Sernaker, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983).

In addition, during patent examination, the pending claims must be "given *>their< broadest reasonable interpretation consistent with the specification." > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. > In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.) < This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) >; Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004).

9. Applicant's arguments with respect to claims 5-8, 12, 14, and 16-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takafuji et al. (U.S. 4,746,628) (of record) is cited as evidence to show that in a broad interpretation the amorphous silicon includes the microcrystalline silicon (Takafuji et al., col. 3, lines 5-10).

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 12, 2004

MARIA F. GUERRERO
PRIMARY EXAMINER